

intra-riparian (longitudinal, elevational) gradient (Johnson and Lowe 1985). In the west, growth of riparian vegetation is increased by the “canyon effect” resulting when cool moist air spills downslope from higher elevations (Figure 2.30). This cooler air settles in canyons and creates a more moist microhabitat than occurs on the surrounding slopes. These canyons also serve as water courses. The combination of moist, cooler edaphic and atmospheric conditions is conducive to plant and animal species at lower than normal altitudes, often in disjunct populations or in regions where they would not otherwise occur (Lowe and Shannon 1954).

Plant Communities

The sensitivity of animal communities to vegetative characteristics is well recognized. Numerous animal species are associated with particular plant communities, many require particular developmental stages of those communities (e.g., old-growth), and some depend on particular habitat elements within those communities (e.g., snags). The structure of streamside plant communities also directly affects aquatic organisms by providing inputs of appropriate organic materials to the aquatic food web, by shading the water surface and providing cover along banks, and by influencing instream habitat structure through in-

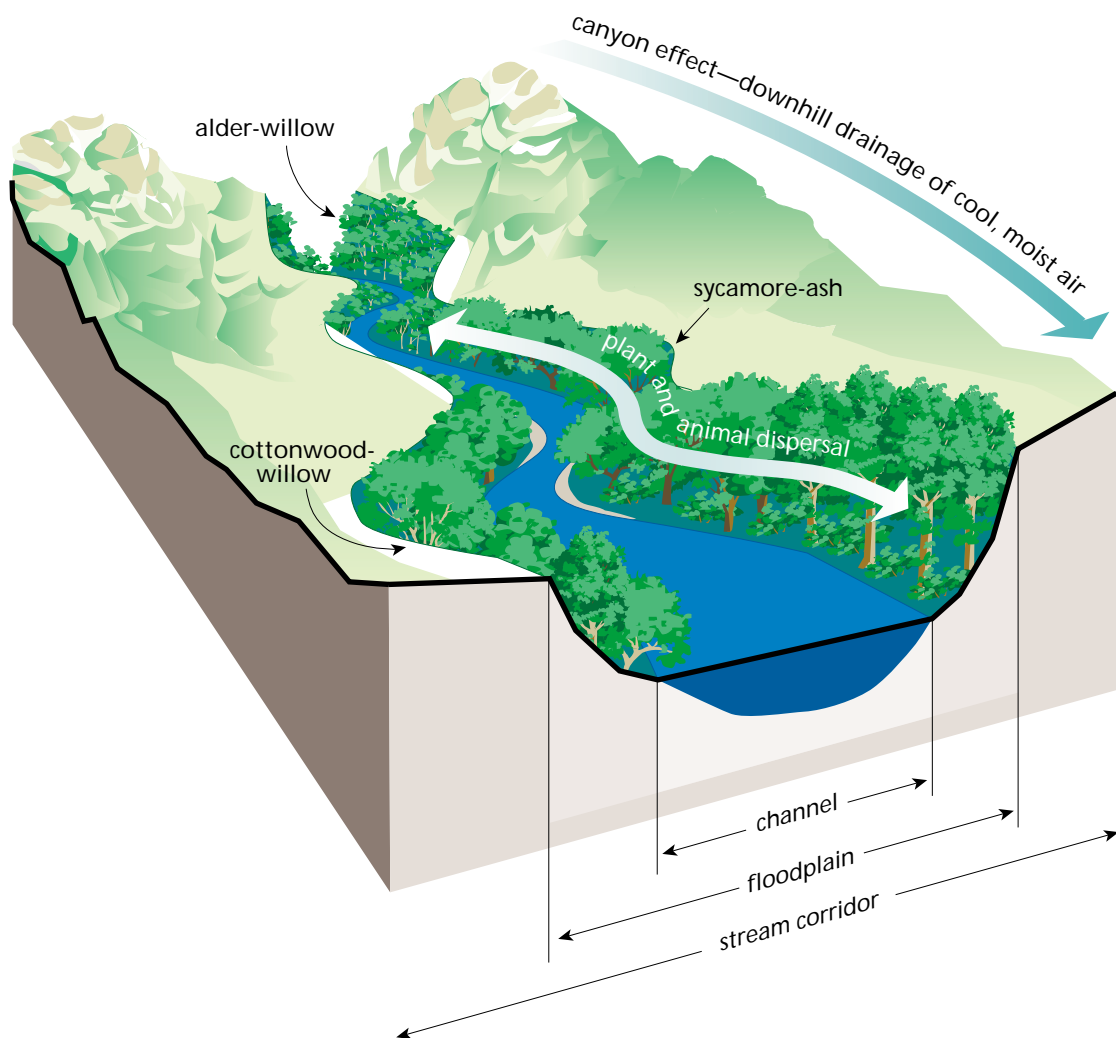


Figure 2.30: Canyon effect. Cool moist air settles in canyons and creates microhabitat that occurs on surrounding slopes.